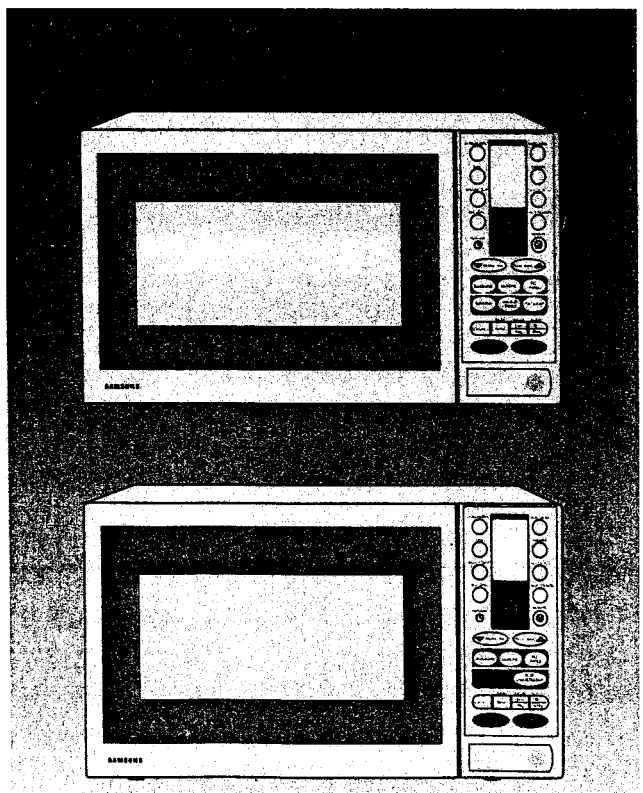
SAMSUNG

MICROWAVE OVEN

RE-1300/RE-1310T/
RE-1320R/RE-1330F

SERVICE Manual

MICROWAVE OVEN



RE-1310T/RE-1330F

CONTENTS

PRECAUTIONS & SPECIFICATIONS.....2

COMPARING CHART & CONTROL PANEL.....3

WIRING DIAGRAM.....4

CAUTIONS OBSERVED WHEN SERVICING.....5

CIRCUIT DESCRIPTIONS.....6

COMPONENT TEST PROCEDURE.....7

MEASUREMENTS & ADJUSTMENTS.....8

LEAKAGE MEASURING PROCEDURE.....9

TROUBLESHOOTING.....10

Exploded View & Parts List.....12

P.C.B Circuit Diagram & Parts List.....19

SET

SEPOL

1. PRECAUTION

1-1. Safety Precaution (⚠)

1) Pacemaker wearers must consult their physician before attempting to service or repair a microwave oven. For additional advice on this subject, write to the manufacturer of your pacemaker.
2) The product should be serviced only by qualified personnel.
3) Though the product has been manufactured in compliance with the Federal performance Standard 21 CFR Subchapter J(DHHS), it is very important when servicing to avoid being exposed to excessive microwave radiation. All the repairs should be performed in accordance with the procedures described in this manual.
4) Use only the iidentical parts as listed in the parts list of this manual in order to comply with the Federal performance Standard 21 CFR Subchapter J(DHHS).
5) In the event of suspected imcrowave energy leakage in excess of 5mW/cm2, please notify;

CENTRAL SERVICE CENTER

6) Repair microwave oven at no charge to the owner for excessive microwave emission levle.
7) Ascertain the cause of the excessive leakage and instruct the owner not to use the unit until the oven has been brought into compliance.
8) If the oven is operated with the door open, please advise the owner not to use the oven and contact the manufacturer and CDRH immediately.
9) There are special components used in the microwave oven which are important for safety. These parts are marked with a on the replacement parts list. It is essential that these critical parts should be replaced only whith the manufacture's specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the original design.

1-2. Servicing Precaution (☞)

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID OPOSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

a) Do not operate or allow the oven to be operated with the door open.
b) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
(1) Interlock operation
(2) Proper door closing
(3) Seal and sealing surfaces (arcing, wear, and other damage)
(4) Damage to or loosening of hinges and latches
(5) Evidence of dropping or abuse.

c). Before turning on the microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, wave guide or transmission line, and cavity for proper alignment, integrity and connections.
d). Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired,replaced, or adjusted by procedures described in this manual before releasing to the owner.
e). A microwave leakage check to verify compliance with the federal performance standard should be performed on each oven prior to release to the owner.

2. SPECIFICATIONS

SPECIFICATIONS

TIMER	99 MINUTES 90 SECONDS
POWER SOURCE	230V 50Hz, AC
POWER CONSUMPTION	MICROWAVE : 1,500W
	MAX : 2,950W
	GRILL: 1,400W
	CONVECTION : 1,450W
OUTPUT POWER	FROM 90W TO 900W (10 LEVEL POWER) →
	(IEC-705 TEST PROCEDURE)
OPERATING FREQUENCY	2,450MHz
MAGNETRON	OM7
COOLING METHOD	COOLING FAN MOTOR
OUTSIDE DIMENSIONS	547(W) x 339(H) x 487(D)

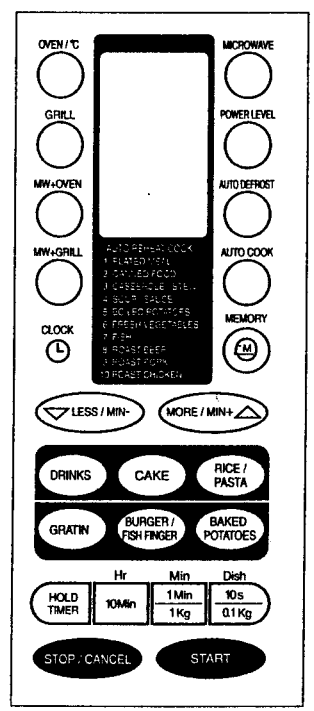
POWER LEVEL		ON TIME	OFF TIME
10%	90W	4 sec	26 sec
20%	180W	7 sec	23 sec
30%	270W	10 sec	20 sec
40%	360W	13 sec	17 sec
50%	450W	16 sec	14 sec
60%	540W	19 sec	11 sec
70%	630W	22 sec	8 sec
80%	720W	25 sec	5 sec
90%	810W	28 sec	2 sec
100%	900W	30 sec	0 sec

3. COMPARING CHART

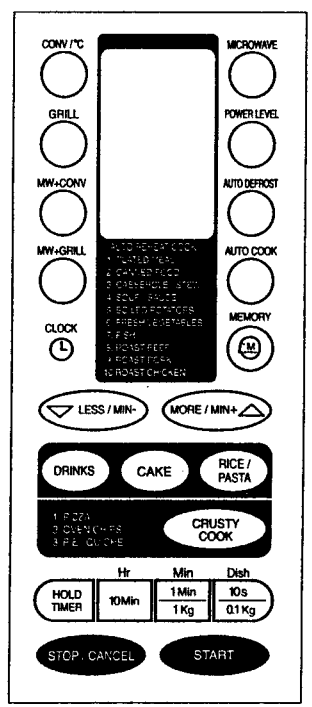
MODEL	RE-1300	RE-1310T	RE-1320R	RE-1330F
MORE/LESS	O	O	O	O
AUTO COOK/DISH	O	O	O	O
AUTO DEFROST	O	O	O	O
TIME COOK	O	O	O	O
POWER LEVEL	O	O	O	O
CONVECTION	O	O	O	O
GRILL	O	O	O	O
MICROWAVE+CONVECTION	O	O	O	O
MICROWAVE+GRILL	O	O	O	O
CRUSTY REHEAT	X	O	X	O
ROAST SPIT	X	X	O	O

4. CONTROL PANEL

RE-1300C/RE-1320C

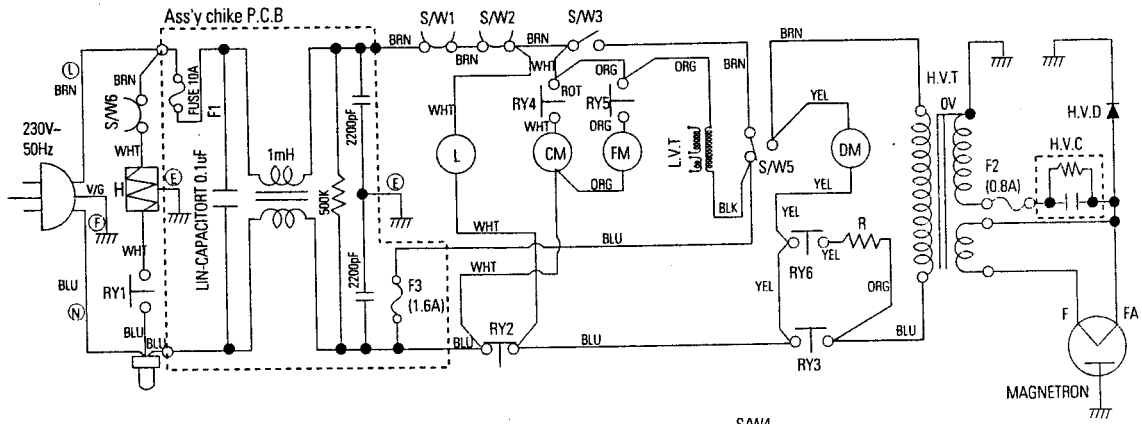


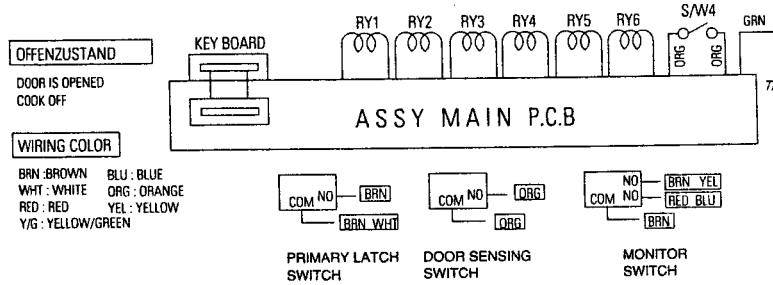
RE-1310C/RE-1330C



NEW CONTROL PANEL

5. WIRING DIAGRAM

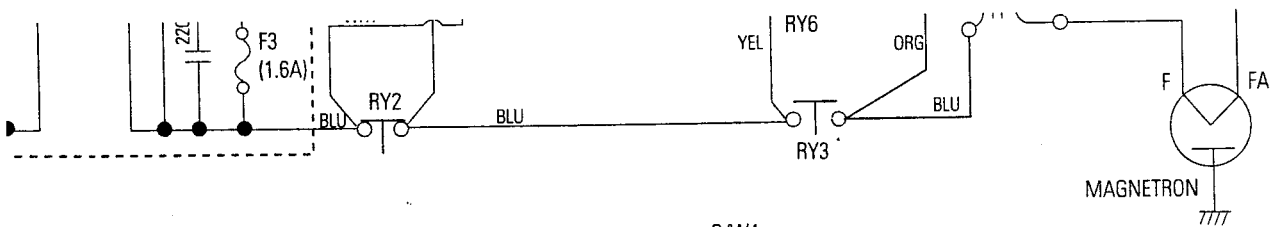


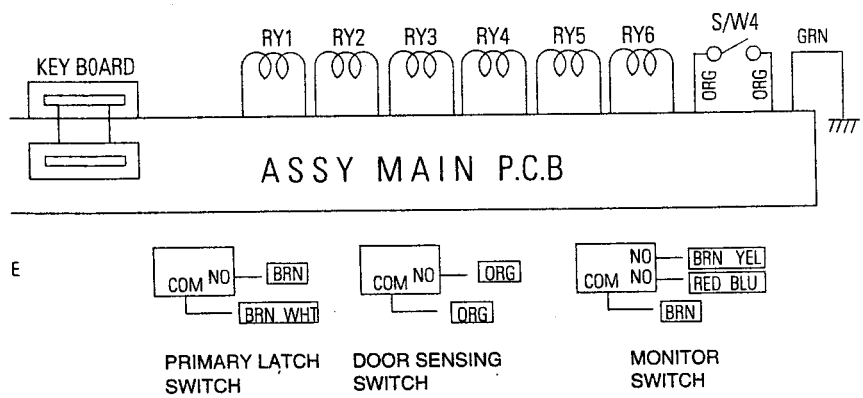


F1 MAIN FUSE
F2 H.V.FUSE
F3 MONITOR FUSE
S/W1 THERMAL CUTOUT(CAVITY)
S/W2 THERMAL CUTOUT(M.G.T)
S/W3 PRIMARY SWITCH
S/W4 DOOR SENSING SWITCH
S/W5 MONITOR SWITCH
S/W6 THERMAL CUTOUT(HEATER)
RY1 HEATER RELAY
RY2 MAIN RELAY
RY3 POWER RELAY
RY4 CONVECTION MOTOR RELAY
RY5 FAN MOTOR RELAY
RY6 INRUSH RELAY

FM FAN MOTOR
DM DRIVE MOTOR
CM CONVECTION MOTOR
H HEATER
H.V.T HIGH VOLTAGE TRANS
H.V.C HIGH VOLTAGE CAAPCITOR
H.V.D HIGH VOLTAGE DIODE
L.V.T LOW VOLTAGE TRANS
L LAMP
R RESISTOR

W/D-1





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F3 MONITOR FUSE
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S/W2 THERMAL CUTOUT(M.G.T)
S/W3 PRIMARY SWITCH
S/W4 DOOR SENSING SWITCH
S/W5 MONITOR SWITCH
S/W6 THERMAL CUTOUT(HEATER)
RY1 HEATER RELAY
RY2 MAIN RELAY
RY3 POWER RELAY
RY4 CONVECTION MOTOR RELAY
RY5 FAN MOTOR RELAY
RY6 INRUSH RELAY

FM FAN MOT
DM DRIVE M
CM CONVEC
H HEATER
H.V.T HIGH VO
H.V.C HIGH VO
H.V.D HIGH VO
L.V.T LOW VOI
L LAMP
R RESISTC

W/D-1

6. CAUTIONS OBSERVED WHEN SERVICING

Unlike many other appliances, the microwave oven is high-voltage, high current equipment. Though it is free from danger in ordinary use, extreme care should be taken during repair.

PRECAUTION

Servicemen should remove their watches whenever working close to or replacing the magnetron.

8-1. Check the ground.

Do not operate on a 2-wire extension cord. The microwave oven is designed to be used when grounded. It is imperative, therefore, to make sure that the oven should be grounded prior to repair.

8-2. Warning about the electric charge in the high voltage capacitor

As an electric charge in the high voltage capacitor remains for about 30 seconds after operation stops, short the current between the oven chassis and the negative terminal of the high voltage capacitor, by using a screwdriver before replacing or checking parts.

☞ : Touch chassis side first then short to the high voltage capacitor terminal by using a screwdriver or jumper wire.

8-3. When parts must be replaced, remove the power plug from the outlet

8-4. When the 1.6 Amp fuse is blown out by the operation of the interlock Monitor switch:

(A) Replace the primary, door sensing and interlock monitor switches. This is mandatory. Refer to page 8 for the necessary adjustments of these switches.

(B) When replacing the fuse, confirm that it has the appropriate rating for this model.

8-5. Avoid inserting any foreign materials, etc. through any hole in the unit during operation.

Never insert any foreign materials or any other metal object through the lamp hole on the cavity or any other holes or gaps, because such objects may work as an antenna and cause microwave leakage.

8-6. Confirm after repair:

(A) After repair or replacement of parts, make sure that screws of the oven are neither loose nor missing; to prevent the microwave leakage.

(B) Make sure that all electrical connections are tight before inserting the plug in to the wall outlet.

(C) Check for radiation leakage. (Refer to the procedure for measuring energy leakage in page 9.)

PRECAUTION

There exists HIGH VOLTAGE ELECTRICITY with high current capabilities in the circuits of the HIGH VOLTAGE TRANSFORMER secondary and filament terminals. It is extremely dangerous to work on or near these circuits with the oven energized.

DO NOT measure the voltage in the high voltage circuit including filament voltage of magnetron.

PRECAUTION

Never touch any circuit wiring with your hand nor with an insulated tool during operation.

7. CIRCUIT DESCRIPTIONS

Refer to the wiring diagram on page 8.

1. When food is placed inside oven and door is closed

(A) Low voltage transformer supplies necessary voltage to the touch control circuit when power cord is plugged in.

(B) The primary interlock switch is closed.

(C) The interlock monitor switch is opened. This interlock monitor switch acts to blow 10A fuse and stop magnetron oscillation when the door is opened during operation under an abnormal condition.

(D) The door key is caught by the door hook, the door sensing switch is closed to send the door-close signal to the touch control circuit.

2. When cooking cycle, power and time are set by touching the function pads

(A) The time set appears in the display window.

(B) The touch control circuit stores the cooking data set.

3. When the START pad is touched

The main relay and the power control relay are controlled by the touch control circuit.

(A) An oven lamp lights the inside of the oven by operation of the main relay in the Touch Control Circuit.

(B) Fan motor rotates and cools the magnetron by blowing the air coming from the intake on the back panel over the magnetron fins. After cooling the fins, this air is directed into the oven to blow out the vapor.

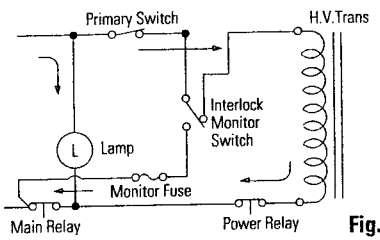


Fig. 1

(C) 230V~50Hz AC is applied to the high voltage transformer through the contacts of primary windings as shown by the solid line just after the power control relay turns ON. (Fig. 1)

(D) 3.4V AC is generated from the filament winding of the high voltage transformer. This 3.4V is applied to the magnetron to heat the magnetron filament through two noise preventing choke coils.

(E) High voltage of 2,230 volts AC is generated from the high voltage transformer secondary and this secondary voltage is increased by the action of the diode and the charging of the high voltage capacitor. This resultant D.C. voltage is then applied to the anode of the magnetron. As shown in the Fig. 2, the first half cycle of the high voltage produced in the secondary high voltage transformer charges the high voltage capacitor.The dotted lines indicate the current flow. During operation of the second half cycle, the voltage produced by the transformer secondary and the charge of the high voltage capacitor are combined and applied to the magnetron as shown in the solid line so that magnetron starts to oscillate. The interference wave generated from the magnetron is prevented by the 1.6uH choke coils, 500pF filter capacitors and the magnetron's shielded case so that TV and radio signals are not interfered with.

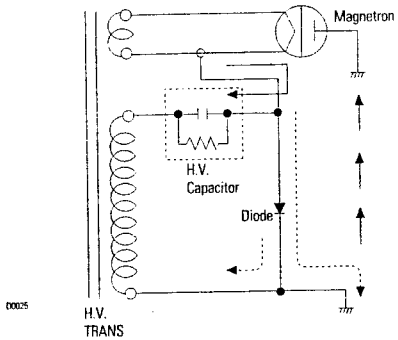


Fig. 2

(F) The power control relay is turned on intermittently by the touch control circuit, when the oven is set at any power except for full power. The touch control circuit controls the ON/OFF time of the power control relay in order to vary the output power of the microwave oven from Low to "Full" power. One complete ON/OFF cycle of the power control is 30 seconds.

(G) The cooking time shown on the display start to count down.

4. When the door is opened during cooking

(A) The primary interlock switch is opened to cut off the primary voltage of the high voltage transformer to stop microwave oscillation.

(B) The door sensing switch is opened to give the door open information to touch control circuit. The main relay stays on, the power control relay turns off and the display stops counting down.

(C) The fan motor and turn-table motor are stopped by operation of the primary interlock switch. But the oven lamp lights the inside of the oven again until the door is closed.

(D) Upon opening the door, the contacts of primary interlock switch open and the contacts of interlock monitor switch close the short circuit.

(E) If the contacts of primary interlock switch do not function properly, the monitor fuse blows out due to the large current surge caused by the monitor switch activation, and this in turn stops magnetron oscillation. (Fig. 3)

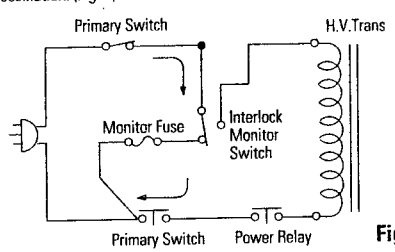


Fig. 3

5. When the CANCEL pad is touched during cooking

(A) Once touching of the CANCEL pad stops the time cooking. Twice touching of the pad cancels all programs stored in the touch control circuit. The time of day reappears on the display window.

(B) The oven lamp and cooking indicators turn off.

(C) The fan motor stops.

(D) The power control relay turns off to cut primary voltage to high voltage transformer so that the magnetron stops oscillation.

8. Component Test Procedure

PRECAUTION

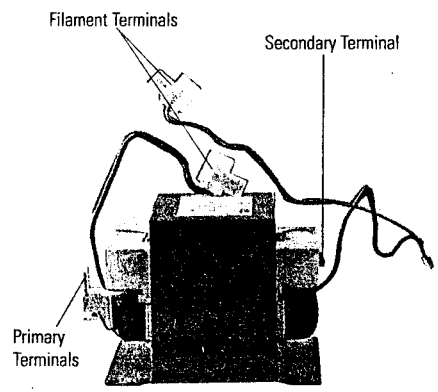
1. High voltage is present at the high voltage terminal of the high voltage transformer during any cook cycle.
2. It is neither necessary nor advisable to attempt measurement of the high voltage.
3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitor.

12-1. High Voltage Transformer

1) Remove connectors from the transformer terminals and check continuity.

2) Normal resistance readings should be as follows:

Secondary.....Approx. 94Ω
Filament.....Approx. 0Ω
Primary.....Approx. 1.7Ω
(Room temperature = 20°C)



12-2. Low Voltage Transformer

The low voltage transformer is located on the control circuit board.

1) Remove the low voltage Transformer from the PCB Ass'y and check continuity.

2) Normal resistor reading should be as follows.

Terminals	Resistance
1~2	195.4Ω
3~4	1.50Ω
5~6	0.73Ω

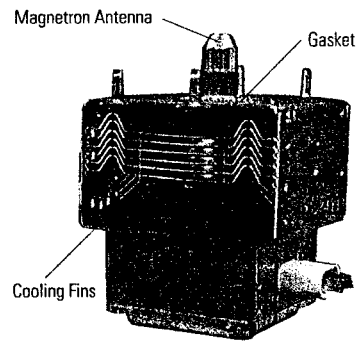
12-3. Magnetron

Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose an open filament or shorted magnetron;

1) Isolate the magnetron from the circuit by disconnecting its leads.

2) A continuity check across the magnetron filament terminals should indicate one ohm or less.

3) A continuity check between each filament terminal and magnetron case should read open.



12-4. High Voltage Capacitor

1) Check continuity of the capacitor with meter set at the highest ohm scale.

2) Once the capacitor is charged, a normal capacitor shows continuity for a short time, and then indicates 9MΩ.

3) A shorted capacitor will show continuous continuity.

4) An open capacitor will show constant 9MΩ.

5) Resistance between each terminal and chassis should read infinite.

12-5. High Voltage Diode

1) Isolate the diode from the circuit by disconnecting its leads.

2) With the ohm-meter set at the highest resistance scale, measure the resistance across the diode terminals. Reverse the meter leads and read the resistance. A meter with 6V, 9V or higher voltage batteries should be used to check the front-to back resistance of the diode, otherwise an infinite resistance may be read in both directions. The resistance of a normal diode will be infinite in one direction and several hundred KΩ in the other direction.

12-6. Main Relay and Power Control Relay

The relays are located on the PCB Ass'y.

1) Isolate the relays from the main circuit by disconnecting the leads.

2) operate the microwave oven with a water load in the oven and the power level set to high.

3) Check continuity between terminals of the relays after the start pad is pressed.

9. Measurements & Adjustments

Precaution

For continued protection against radiation hazard, replace parts in accordance with the wiring diagram and be sure to use the correct part number for the following switches.: Primary and secondary interlock switches and the interlock monitor switch all together. Then follow the adjustment procedures below. After repair and adjustment, be sure to check the continuity of all interlock switches and the interlock monitor switch.

13-1. Adjustment of Primary Switch, Door Sensing Switch and Monitor Switch

1) When mounting Primary switch and interlock Monitor switch to Latch Body, consult the figure below.

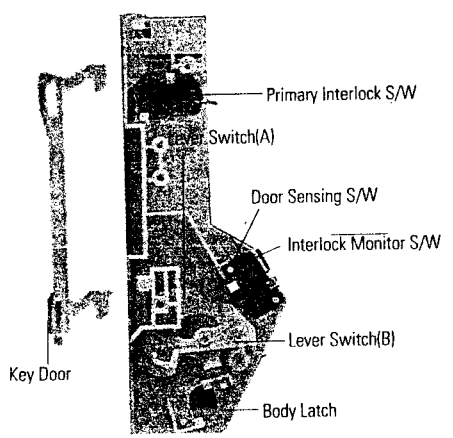
NOTE: No specific adjustment during installation of Primary switch and Monitor switch to the latch body is necessary.

2) When mounting the Latch Body to the oven assembly, adjust to the Latch Body by moving it so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the Latch Body to the oven assembly.

3) Reconnect to Monitor switch and check the continuity of the monitor circuit and all latch switches again by following the components test procedures.

	Door Open	Door Closed
Primary switch	∞	0
Monitor switch (COM-NC)	0	∞
Monitor switch (COM-NO)	∞	0
Door Sensing S/W	∞	0

Please confirm that the gap between the switch housing and the switch actuator is no more than 0.5mm when door is closed.



13-2. Output Power of Magnetron

The output power of the magnetron can be simply measured by performing a water temperature rise test.

Equipment needed for the test:

* One 1-liter cylindrical borosilicate glass vessel (Outside diameter of 190mm)
* One glass thermometer with mercury column

NOTE: Check line voltage under load. Low voltage will lower the magnetron output. Make all temperature and time tests with accurate equipment.

(A) Fill the one liter glass vessel with one liter of water.

(B) Stir water in glass vessel with thermometer and record glass vessel's temperature as T1. (10±1°C)

(C) After moving the water into another glass vessel, place it on the center of the cooking tray. Set the oven to high power and operate for 49 seconds exactly. (3 seconds included as a holding time of magnetron oscillation)

(D) When heating is finished, stir the water again with the thermometer and measure the temperature rise as T2.

(E) Subtract R1 from T2. This will give you the water temperature rise. (ΔT)

(F) The output power is obtained by the following formula;

$$\text{Output Power} = \frac{4.187 \times 1000 \times \Delta T}{46}$$

46 : Heating Time (sec)
4.187 : Coefficient for Water
1000 : Water (cc)
ΔT : Temperature Rise (T2-T1)

*** Output (W) = 91 x ΔT**

(F) Normal temperature rise for this model is 9°C to 11°C at 'HIGH'.

NOTE 1: Variations or errors in the test procedure will cause a variance in the temperature rise. Additional power test should be made if temperature rise is marginal.

NOTE 2: Output power in watts is computed by multiplying the temperature rise (step E) by a power factor of 91 in case of centigrade temperature.

13-3. Microwave Heat Distribution - Heat Evenness

The microwave heat distribution can be checked by indirectly measuring the water temperature rises at certain positions in the oven as directed below.

(1) Prepare five beakers made of 'Pyrex', having 100 milliliters capacity each.

(B) Measure exactly 100milliliters off water load with a measuring cylinder and pour it into each beaker.

(C) Measure the temperature of each water load. (Readings shall be taken to the first place of decimals.)

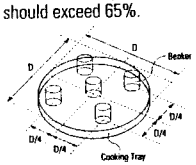
(D) Put each beaker in place on the cooking tray as illustrated in Figure below and start heating.

(E) After heating for 2 minutes, measure the temperatures of water in each beaker.

(F) Microwave heat distribution rate can be obtained by the following formula.

$$\text{Heat Distribution} = \frac{\text{Minimum Temperature Rise}}{\text{Maximum Temperature Rise}} \times 100(\%)$$

The result should exceed 65%.



CAUTION

MICROWAVE RADIATION

DO NOT BECOME EXPOSED TO MICROWAVE RADIATION FROM MICROWAVE GENERATOR OR OTHER PARTS CONDUCTING MICROWAVE ENERGY.

10. Leakage Measuring Procedure

14-1. Equipment

* Microwave Energy Survey Meter
* 600cc glass beaker
* Mercurial or digital thermometer 100°C or 212°F

14-2. Procedure for Measurement of Microwave Energy Leakage

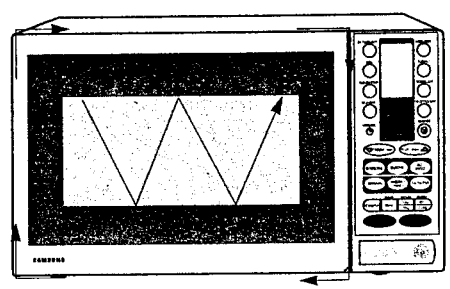
1) Pour 275±15cc of 20±5°C (68±9°F) water in a beaker which is graduated to 600cc, and place the beaker in the center of the oven.

2) Start to operate the oven and measure the leakage by using a microwave energy survey meter.

3) Set survey meter with dual ranges to 2,450MHz.

4) When measuring the leakage, always use the 2 inch spacer cone with the probe. Hold the probe perpendicular to the cabinet door. Place the spacer cone of the probe on the door and/or cabinet door seam and move along the seam, the door viewing window and the exhaust openings moving the probe in clockwise direction at a rate of 1 inch/sec. If the leakage testing of the cabinet door seam is taken near a corner of the door, keep the probe perpendicular to the areas making sure that the probe end at the base of the cone does not get closer than 2 inches to any metal. If it gets closer than 2 inches, erroneous readings may result.

5) Measured leakage must be less than 5mW/cm², after repair or adjustment.



14-3. Check for Microwave Energy Leakage with Outer Panel Removed.

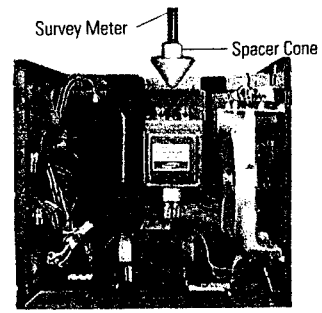
1) Remove the outer panel.

2) Pour 275±15cc of 20±5°C(68±9°F) water in a beaker which is graduated to 600cc, and place the beaker in the center of the oven.

3) Start to operate the oven at the highest power level.

4) Set survey meter with dual ranges to 2,450MHz.

5) By using the survey meter and spacer cone as described above, measure around the opening area of magnetron, the surface of the air guide and the surface of the wave guide as shown in the following photo but avoid the high voltage components. The meter should read less than 5mW/cm².



WARNING

AVOID THE HIGH VOLTAGE COMPONENTS.

14-4. Note on Measurement

1) Do not exceed the limited scale.

2) The test probe must be held on the grip of the handle, otherwise a false reading may result when the operator's hand is between the handle and the probe.

3) When high leakage is suspected, do not move the probe horizontally along the oven surface; this may cause damage to the probe.

4) Follow the recommendation of the manufacturer of the microwave energy survey meter.

14-5. Record keeping and notification after measurement

1) After adjustment and repair of a radiation preventing device, make a repair record for the measured values, and keep the data.

2) If the radiation leakage is more than 5mW/cm² after determining that all parts are in good condition, functioning properly and the identical parts are replaced as listed in this manual, notify that fact to;

CENTRAL SERVICE CENTER

14-6. At least once a year have the Microwave Energy Survey Meter checked for accuracy by its manufacturer.

11. Troubleshooting

PRECAUTION

1. CHECK GROUNDING BEFORE CHECKING FOR TROUBLE.
2. BE CAREFUL OF THE HIGH VOLTAGE CIRCUIT.
3. DISCHARGE THE HIGH VOLTAGE CAPACITOR.
4. WHEN CHECKING THE CONTINUITY OF THE SWITCHES OR TRANSFORMER, DISCONNECT ONE LEAD WIRE FROM THESE PARTS AND THEN CHECK CONTINUITY WITHOUT THE POWER SOURCE ON. TO DO OTHERWISE MAY RESULT IN A FALSE READING OR A DAMAGE TO YOUR METER.
5. DO NOT TOUCH ANY PART OF THE CIRCUIT OR THE TOUCH CONTROL CIRCUIT BOARD, SINCE STATIC ELECTRIC DISCHARGE MAY DAMAGE THIS CONTROL PANEL. ALWAYS TOUCH GROUND WHILE WORKING ON THIS TO DISCHARGE ANY STATIC CHARGE BUILT UP IN YOUR BODY.

First of all operate the microwave oven by observing the correct operating procedures by time cooking in order to find the exact cause of any trouble.

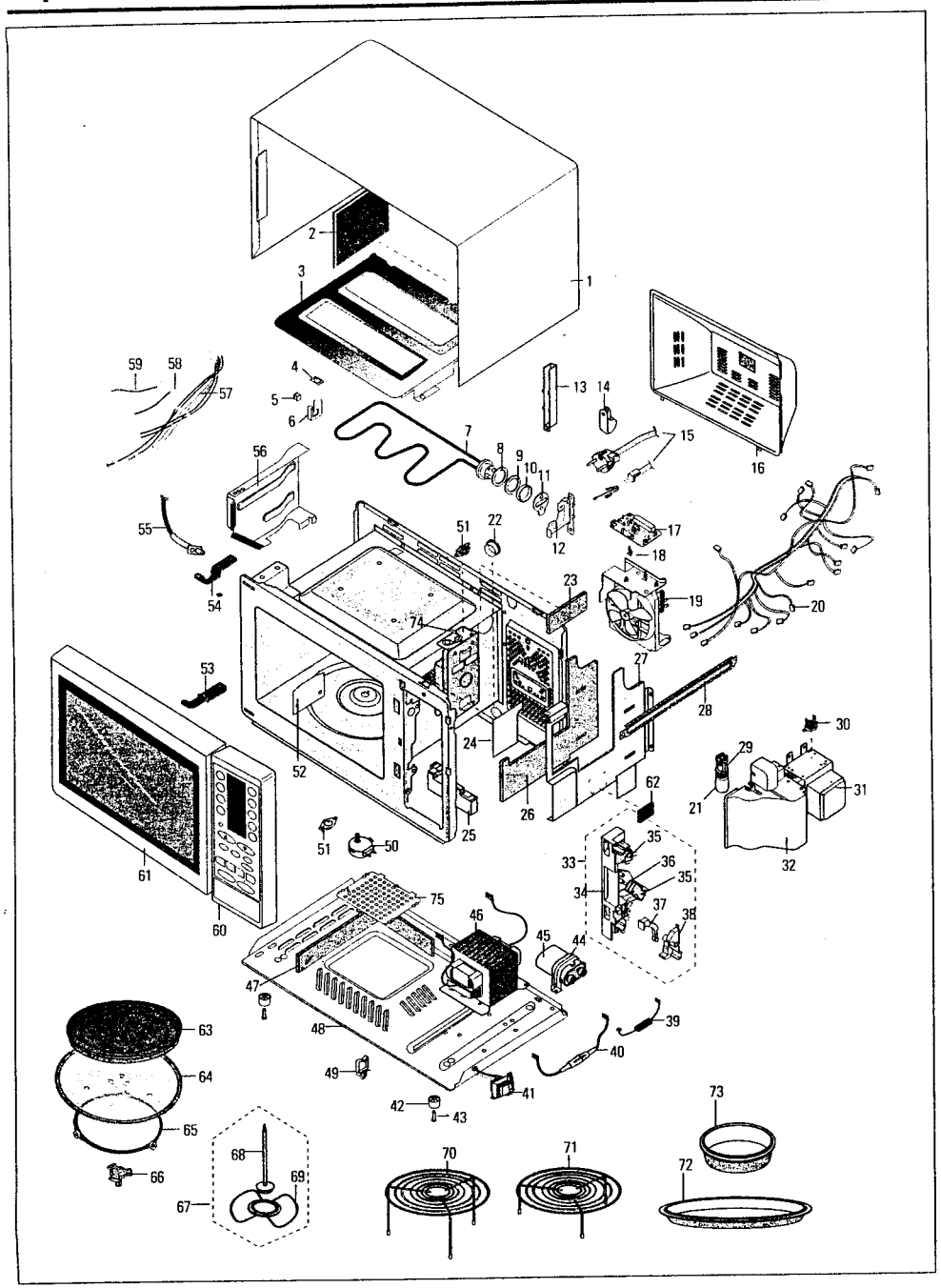
15-1. Problems not Related to Defects of the Oven

	SYMPTOM	CAUSE	CORRECTIONS
1	Oven is dead. Fuse is OK. No display and no operation at all.	1. Open or loose lead wire harness 2. Open thermal cutout(Magnetron) 3. Open low voltage transformer 4. Defective Ass'y PCB	Check fan motor when thermal cutout is defective. Check Ass'y PCB when LVT is defective.
2	No display and no operation at all. Fuse is blown.	1. Shorted lead wire harness 2. Defective primary latch switch(NOTE 1) 3. Defective monitor switch (NOTE1) 4. Shorted HVCapacitor 5. Shorted HVTransformer (NOTE2)	Check adjustment of primary, interlock monitor, door sensing switch.
		NOTE 1: All of these switches must be replaced at the same time. (refer to adjustment instructions) Check continuity of power relay contacts and if it has continuity, replace power relay also. NOTE 2: When HVTransformer is replaced, check diode and magnetron also.	
3	Oven does not accept key input(Program)	1. Key input is not in-Sequence 2. Open or loose connection of membrane key pad to Ass'y PCB 3. Shorted or open membrane panel 4. Defective Ass'y PCB	Refer to operation procedure. Replace PCB main.
4	Timer starts countdown but no microwave oscillation. (No heat while oven lamp and fan motor turn on.)	1. Off-alignment of latch switches 2. Open or loose connection of high voltage circuit especially magnetron filament circuit NOTE: Large contact resistance will bring lower magnetron filament voltage and cause magnetron to lower output and/or intermittent oscillation. 3. Defective high voltage components H.V.Transformer H.V.Capacitor H.V.Diode, H.V.Fuse Magnetron 4. Open or loose wiring of power relay 5. Defective primary latch switch 6. Defective power relay or Ass'y PCB	Adjust door and latch switches. Check high voltage component according to component test procedure and replace if it is defective. Replace PCB main.

Troubleshooting

	SYMPTOM	CAUSE	CORRECTIONS
5	Oven lamp and fan motor turn on	1. Misadjustment or loose wiring of primary latch switch 2. Defective primary latch switch	Adjust door and latch switches.
6	Oven can program but timer does not start.	1. Open or loose wiring of secondary interlock switch 2. Off-alignment of primary interlock 3. Defective secondary interlock S/W	Adjust door and interlock switches.
7	Microwave output is low. Oven takes longer time to cook food.	1. Decrease in power source voltage. 2. Open or loose wiring of magnetron filament circuit. (Intermittent oscillation)) 3. Aging change of magnetron	Consult electrician.
8	Fan motor turns on when plugged in	Loose wiring of door sensing switch	Check wire of door sensing switch.
9	Oven does not operate and return to the plugged in mode.	Defective Ass'y PCB	Replace PCB main.
10	Loud buzzing noise can be heard.	1. Loose fan and fan motor 2. Loose screws on H.V.Transformer 3. Shorted H.V.Diode	Tighten screws of fan motor. Tighten screws of H.V.Transformer. Replace H.V.Diode.
11	Turntable motor does not rotate.	1. Open or loose wiring of turntable motor. 2. Defective turntable motor.	Replace turntable motor.
12	Oven stops operation during cooking	1. Open or loose wiring of primary interlock switch 2. Operation of thermal cutout(Magnetron)	Adjust door and latch switches.
13	Sparks	1. Metallic ware or cooking dishes touching on the oven wall. 2. Ceramic ware trimmed with gold or silver powder also causes sparks.	Educate your customer. Do not use any type of cookware with metallic trimming.
14	Uneven cooking	Uneven intensity of microwave due to its characteristics.	Wrap thinner parts of the food with aluminum foil. Use plastic wrap or cover with a lid. Stir once or twice while cooking foods such as soup, cocoa, or milk.
15	Clock noise from the turntable motor when it starts to operate.	The noise may result from the motor.	Replace turntable motor.

Exploded View - Main Parts (RE-1300/RE-1310T/RE-1330F)



Parts List - Main Parts

Ref No.	Parts No.	Description/Specification	Q'ty	Remark
1	72061-0015-01	PANEL-OUTER;C/STEEL T0.6 W405.5 L1180.8 SC-WH-01-B	1	•
2	73053-0032-03	CUSHION-RUBBER;DFA20 T2 W200 L100	1	
3	73012-0250-001	BRACKET-UPPER;ALSTAR T0.6 W273 L432 MB6544W	1	
4	76674-232-810	SPRING-PLATE;SK-5 T0.5	1	
5	73074-0076-00	SUPPORTER-HEATER(B);ALUMINA 5G RE-650	1	•
6	73074-0075-00	SUPPORTER-HEATER;ALUMINA 10G RE-650	1	•
7	76402-0012-00	HEATER-GRILL;D6.6 230V 1400W 36.44OHM RE-650 SJH	1	• ▲
8	70534-0004-02	WASHER-TEFLON; SLOT ID22.2 OD28 T1.2 TEFLON	1	
9	73404-0014-00	GASKET-HEATER;BRASS T1.5 OD30.5 D22.5	1	
10	71434-0002-00	FLANGE-RING;C3604BD ID22.1 OD26 L4.7 M9GF45	1	
11	73014-0275-00	BRACKET-EARTH;BSS2-A T1.0 W28 L38 M9GF45	1	
12	73013-0255-00	BRACKET-HEATER;BSS2-A T1.0 W55 L55.5 M9GF45	1	
13	73012-0313-00	BRACKET-AIR GUIDE;ALCOAT T0.8 W61 L218.5	1	•
14	76449-0003-00	CABLE-CLAMP;DA-6N NY-66	1	
15	79243-0080-01	ASSY POWER CORD;KKP-4819D/B232 1.5MM 250V16A L1700	1	
16	73311-0194-01	COVER-BACK;SECC T0.6 W385.5 L275 BLK-COATING	1	
17	79179-0046-00	ASSY NOISE FILTER;250V50HZ GRILL MODEL SS-599B	1	
18	76659-200-518	SUPPORT-P.C.B;DASS-T9N	2	
19	76822-0061-00	MOTOR-FAN;AMM92-002AUEE 230V0.20A MIN2550RPM	1	
20	79202-0454-00	ASSY WIRE HARNESS-A;230V50HZ RE-1300	1	•
21	B4158-0023	LAMP;T25 230V 25W E14 PHILIPS	1	
22	A0079-0011	BUSHING;DASB-16N 17.8X6.3 NYLON NTR SHORT BUSHING	1	•
23	76803-207-015	CUSHION-LAMP;P.U.T-FOAM T40 W10 L90 M6245	1	
24	70233-0002-00	FILM-LAMP;T0.25 W105 L85 CLEAR RE-1300	1	•
25	71533-0015-00	LEVER-DOOR;POM(F20-01) NTR MW5630T	1	
26	70242-0029-00	ADIABATIC-RIGHT;T3 W219.3 L214.8 RE-1300	1	•
27	73311-0195-00	COVER-ADIABATIC;SECC T0.6 W249.7 L353.5 RE-1300	1	•
28	73073-0035-001	SUPPORTER-MGT;SECC T0.6 W38 L342.5 MW6630T	1	
29	B3046-0003	SOCKET-LAMP;250V2A 22.230 E14 BJB	1	
30	A3024-0010	SW-THERMO;NT-101NA(5XV)P 125V15A V 140/130 23.8MM	1	▲
31	77059-0018-00	MAGNETRON;OM75P(31)ESS	1	
32	73312-0199-00	COVER-AIR;NYLON#66 95G RE-1300 BLK	1	
33	79292-0053-01	ASSY BODY LATCH;M8145G NEW LATCH	1	
34	72681-0004-001	LATCH-BODY;POM 50G M8135G NEW LATCH	1	
35	73579-203-207	SW-MICRO;VP533A-OF P,S(T85)	2	
36	73579-203-278	SW-MICRO;VP-531A-OF(T85)	1	
37	71533-0011-00	LEVER-SWITCH(A);POM 10G NTR MX245	1	
38	71533-0012-00	LEVER-SWITCH(B);POM 12G NTR MX245	1	
39	79164-0156-00	ASSY-H.V.D;V2M6 PI9 0.05MT	1	
40	79163-0196-00	ASSY-H.V.FUSE;THV060T-0800-0 60/70 SCREW	1	
41	77202-0120-00	TRANS-L.V;RE-1280STC RE-1300 230V 50HZ AC16/3V	1	•
42	76073-200-810	FOOT;PP JI350 BLK	4	
43	77364-241-310	FOOT-PIN;P.P(JI350,BLK)	4	
44	73013-0194-00	BRACKET-H.V.C;SECC T0.8 W31 L125.8	1	
45	A1110-0027	C-OIL;CH-2101104B7N 115-J 2.1KVAC 3P	1	▲
46	77202-0128-00	TRANS-H.V;DB1300NTC RE-1300 AC230V 60HZ AC2230V	1	•
47	76803-207-070	CUSHION-GUIDE;P.U.T FOAM T40X10X460 MX246	1	
48	72201-0035-014	BASE-PLATE;SGCC1-Z T0.8 W375 L588 RE-1300	1	•
49	A0078-0016	WIRE-SADDLE;DAWS-2NB NYLON66 NTR	1	
50	76823-0048-00	MOTOR-SYNCHRONOUS;M2LJ24ZS52 220/240V50/60HZ M6235	1	
51	A3024-0020	SW-THERMO;NT-101NA(5XH)P 125V15A H 130/60 30MM	2	
52	73314-0208-00	COVER-CEILING;MICA SHEET T0.5 W48.5 L117 RE-1300	1	•
53	73094-0035-001	HINGE-LOWER;SCP1 T3.0 W24.7 L91.2 BLK COAT MB245	1	
54	73094-0036-002	HINGE-UPPER;SCP1 T3.0 W26 L76 BLK COAT MB245	1	

Parts List - Main Parts

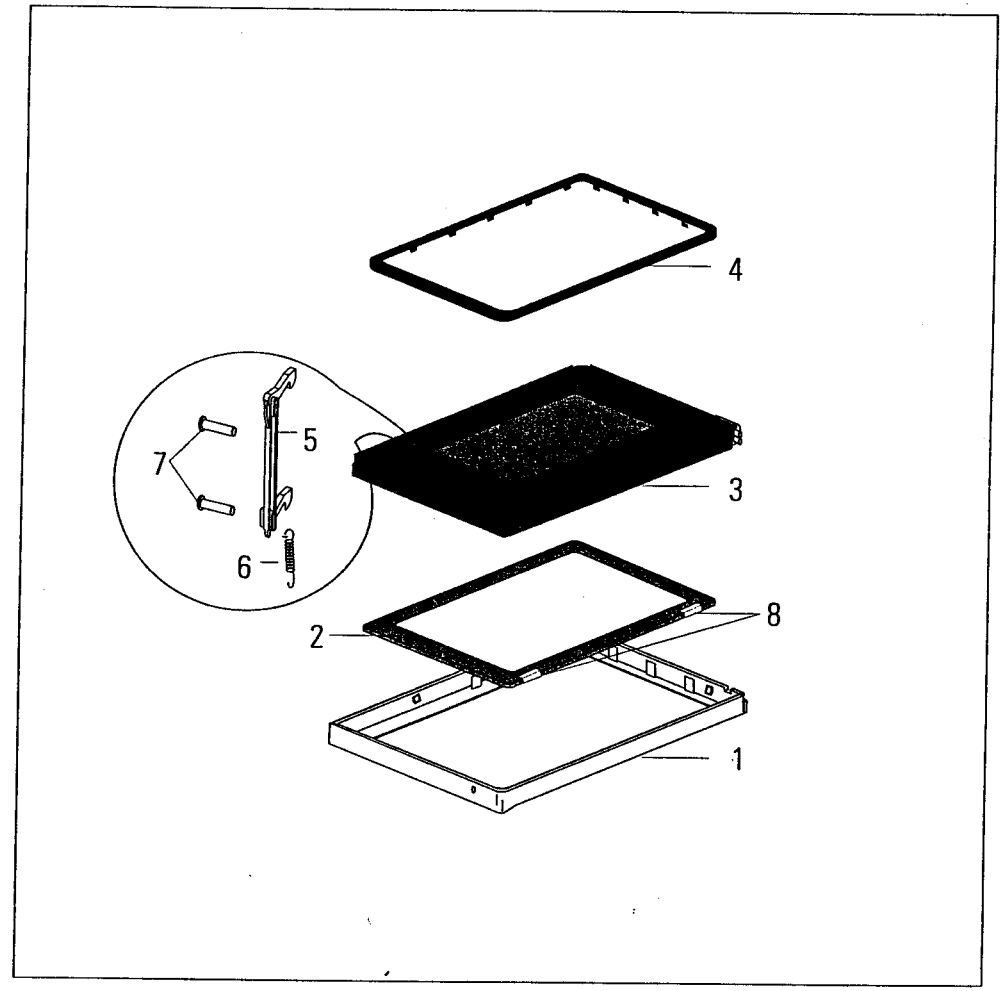
Ref No.	Parts No.	Description/Specification	Q'ty	Remark
55	72189-606-013	THERMISTOR-PROBE;PT-312-K2	1	
56	73352-0087-001	GUIDE-AIR;ALCOAT T0.6 W240 L242.5 M9GF45	1	
57	79203-0455-00	ASSY WIRE HARNESS-C;230V50HZ RE-1300	1	●
58	79204-0381-00	ASSY WIRE HARNESS-E;230V50HZ M9G45 CTW	1	
59	79224-0019-03	ASSY WIRE LEAD-C;L200 BLK N/FILTER GND	1	
60	79101-0598-00	ASSY CONTROL-BOX;230V50HZ RE-1330F(SAW) WHT	1	● ▲
60	79101-0598-02	ASSY CONTROL-BOX;230V50HZ RE-1310T(SAW) WHT ENG	1	● ▲
60	79101-0598-04	ASSY CONTROL-BOX;230V50HZ RE-1300(SKW) WHT	1	● ▲
61	79321-0224-00	ASSY DOOR;RE-1330F(SAW) WHT SS-BASIC	1	● ▲
62	73054-0048-00	CUSHON-H.V.T;RUBBER(CR) T9 W30 L50 RE-1300	1	●
63	73602-0022-00	TRAY-CONVECTION;SPP T0.8 W12 L325.9 RE-1300	1	●
64	73602-0008-00	TRAY-COOKING;GLASS T5.0 PI345 1250G M551T	1	
65	79362-0281-11	ASSY-GUIDE ROLLER;D22.5 RE-1300	1	●
66	71444-0021-00	COUPLER;PTFE 20G WHT RE-1300	1	●
67	79362-0446-04	ASSY-ROTISSERIE;M9GF45	1	● RE-1320R/RE-1330F
68	79363-0460-00	ASSY-SHAFT BARBECUE;M9GF45 STS304 D6 M9GF45	1	● RE-1320R/RE-1330F
69	79362-0439-00	ASSY-LEG;M9GF45	1	● RE-1320R/RE-1330F
70	79362-0478-00	ASSY-WIRE RACK(HIGH);RE-1300 H104 PI3	1	
71	79362-0478-01	ASSY-WIRE RACK(LOW);RE-1300 H44 PI3	1	
72	73602-0014-01	TRAY-CRUSTY;THERMA-PLUS T5 PI300 COATING	1	RE-1310T/RE-1330F
73	73602-0016-00	TRAY-OIL;GLASS(NEOREX) T5 PI210 600G	1	● RE-1320R/RE-1330F
74	73939-218-003	CLAMP-CORD;DALC-2-1 (SILICI)	1	
75	73013-0329-00	BRACKET-COVER MOTOR;SGCC1-Z T0.8 W110 L125 RE-1300	1	●

● : Unique Part

▲ : Safety Parts

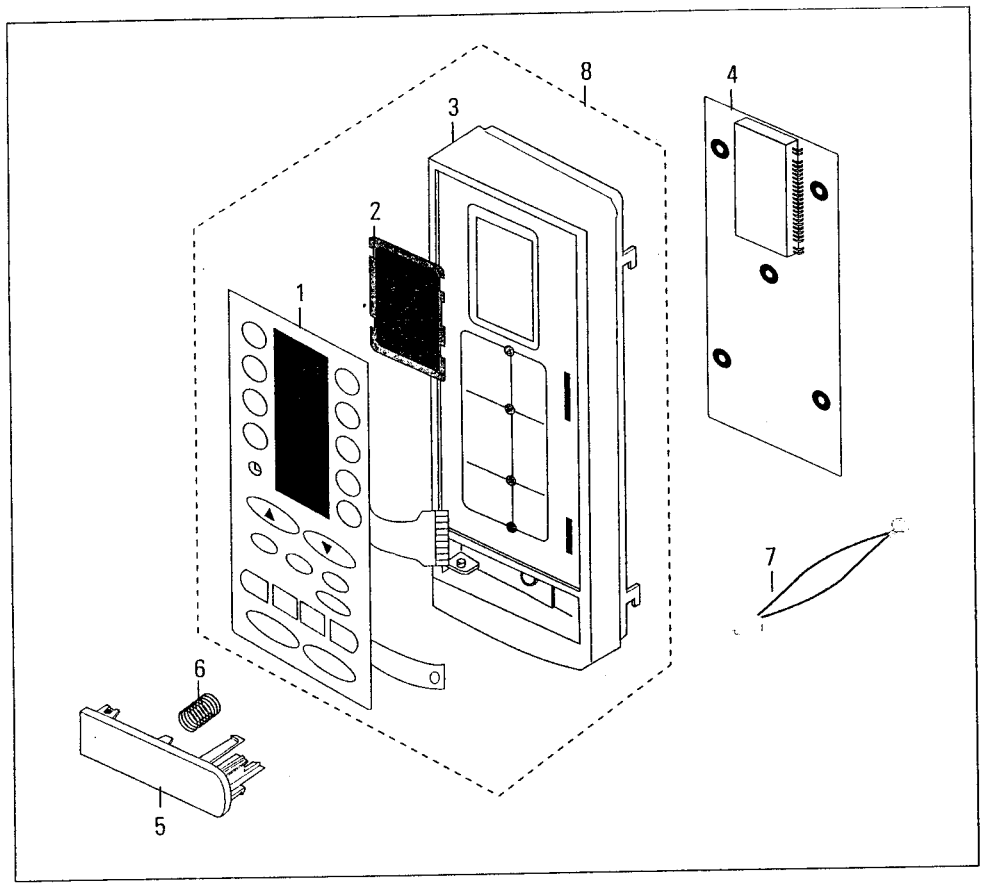
▲ : Electrostatically Sensitive Devices

Exploded View & Parts List - Door Parts



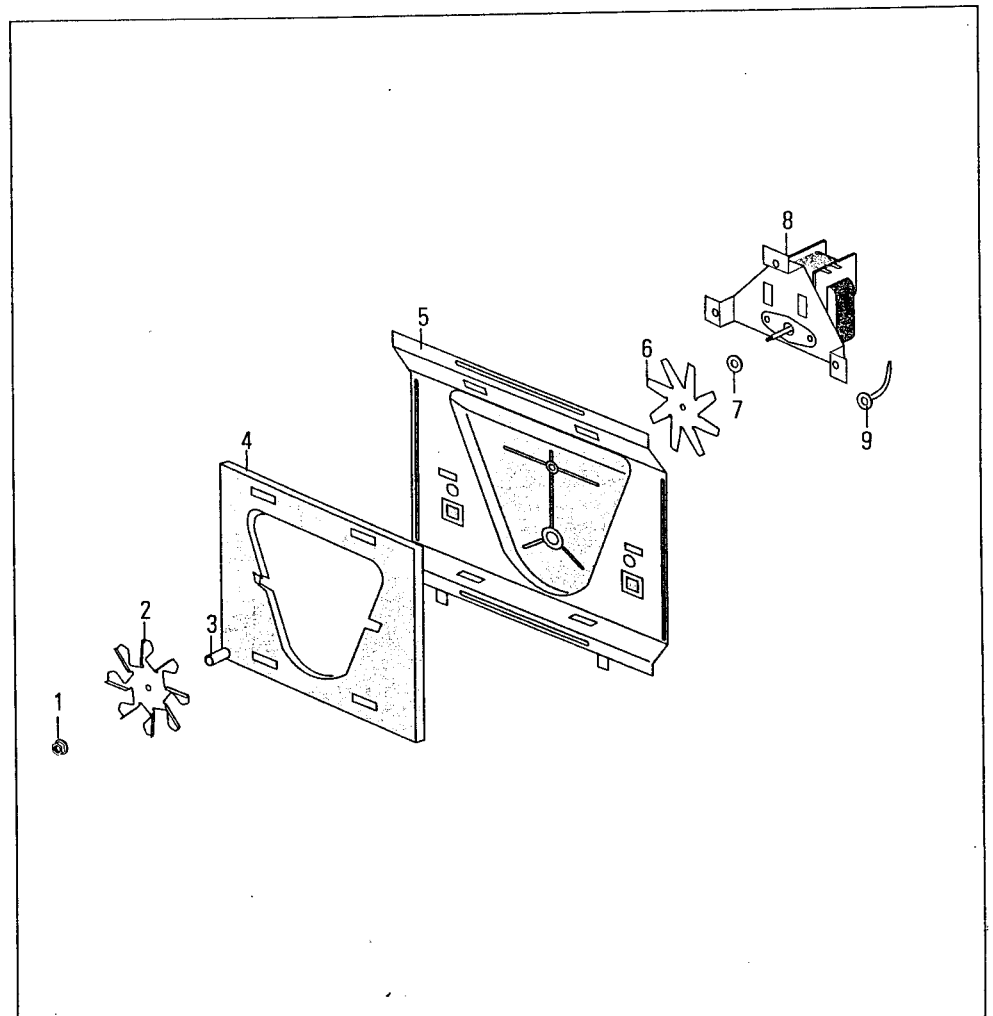
Ref No.	Parts No.	Description/Specification	Q'ty	Remark
1	74041-0097-00	DOOR-A;PC RP-WH-01-K 290G RE-1300	1	●
2	74113-0046-00	SCREEN-DOOR(B);TEMP GLASS T3.2XW278XL423.7 WHT	1	● ▲
3	79341-0025-05	ASSY DOOR-E;MBG45 COATING SIL/SELANT	1	
4	74041-0098-00	DOOR-C;PBT BLK 24G RE-1300	1	●
5	74042-0065-00	DOOR-KEY;POM(TC3005) BLK 13G W3	1	
6	72724-0036-00	SPRING-KEY;ES HSW3 PI0.7 D7.0/L40 BULING	1	
7	70544-0010-00	PIN-HINGE;PI4 L17 MSWR10 M301TBC	2	
8	A0071-0082	TAPE-DOUBLE FACE;PET T0.4 W9 WHT SEIL SI-500HI	1	

Exploded View & Parts List - Control Parts



Ref No.	Parts No.	Description/Specification	Q'ty	Remark		
1	76013-0095-03	MEMBRANE-PANEL;PET W90.5 L225.7 RE-1330F(SAW)	1	RE-1330F	•	▲
1	76013-0095-01	MEMBRANE-PANEL;PET W90.5 L225.7 RE-1310T(SAW)	1	RE-1310T	•	▲
1	76013-0095-00	MEMBRANE-PANEL;PET W90.5 L225.7 RE-1300 (SAW)	1	RE-1300	•	▲
1	76013-0095-02	MEMBRANE-PANEL;PET W90.7 L225.7 RE-1320R(SAW)	1	RE-1320R	•	▲
2	74073-0031-00	WINDOW-DISPLAY;ACRYL(HI-855M) RC-SM-04-K 13G RE-1300	1		•	
3	74051-0072-00	CONTROL-PANEL;PC RP-WH-01-K 180G RE-1300	1		•	
4	79129-0716-00	ASSY P.C.B;230V50HZ RE-1300	1		•	▲
5	74083-0117-00	BUTTON-PUSH;PC RP-WH-01-K 32G RE-1300	1		•	
6	72724-0026-00	SPRING-BUTTON;CS SWP PI0.7 D17/L25.8	1			
7	79224-0006-00	ASSY WIRE LEAD-G;L80 PCB GROUND	1			
8	79109-0611-00	ASSY CONTROL-PANEL;230V50HZ RE-1330F(SAW) WHT ENG	1	RE-1330F	•	▲
8	79109-0612-00	ASSY CONTROL-PANEL;230V50HZ RE-1310T(SAW) WHT ENG	1	RE-1310T	•	▲
8	79109-0599-00	ASSY CONTROL-PANEL;230V50HZ RE-1300(SAW) WHT	1	RE-1300	•	▲
8	79109-0613-00	ASSY CONTROL-PANEL;230V50HZ RE-1320R(SAW) WHT ENG	1	RE-1320R	•	▲

Exploded View & Parts List - Casing Parts



Ref No.	Parts No.	Description/Specification	Q'ty	Remark	
1	77224-209-610	NUT-FLANGE;MSWR10 M4	1	•	
2	71613-0001-00	FAN-CONVECTION;ALSTAR T0.6 PI109 RE-1300	1	•	▲
3	71414-0007-00	BUSH-GEAR MOTOR;MSWR3 D5.6 L12.7 RE-1300	1	•	
4	70242-0028-00	ADIABATIC-CASING;T5 W256 L250 RE-1300	1	•	
5	73011-0298-00	BRACKET-CASING;ALSTAR T0.6 W265 L265 RE-1300	1	•	▲
6	75703-201-810	BLADE-FAN;SECC T0.6	1	•	
7	77308-305-001	WASHER-PLAIN;T0.8*PI5*PI12 FE,EZY	1		▲
8	76822-0062-00	MOTOR-CONVECTION;AMM92-003AUEA 230V0.3A MIN2800RPM	1		
9	73939-218-003	CLAMP-CORD;DALC-2-1(SILICIN)	1		

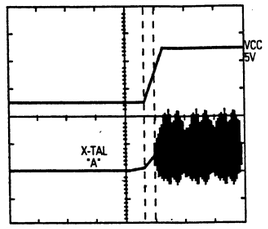
Parts List - Standard Parts

Parts No.	Description/Specification	Q'ty	Remark
70504-0002-00	SCREW-TAP TITE;TH + 3 M4 L10 SWR10 ZPC2 TOOTH	1	GROUND
70504-0002-00	SCREW-TAP TITE;TH + 3 M4 L10 SWR10 ZPC2 TOOTH	1	NOISE
70504-0002-00	SCREW-TAP TITE;TH + 3 M4 L10 SWR10 ZPC2 TOOTH	1	HVD
70504-0002-00	SCREW-TAP TITE;TH + 3 M4 L10 SWR10 ZPC2 TOOTH	1	MEM-PN
70504-0004-00	SCREW-ASSY TAP;TH 2S 4 L12+FIBER MSWR3 ZPC3	4	CV-MOT
70504-0008-00	SCREW-ASSY MACHINE;TH 4 L10 STS430	1	SENSOR
70504-0019-00	SCREW-ASSY MACHINE;PH M4X0.7P 8 MSWR10 SN1 WS	2	B/EART
70859-800-311	TAPE-SCOTCHPAR;POLYESTER FILM 3M 893 50W	1	TRAY
77094-211-410	BOLT-FLANGE;MSWR3 M5X10 FE,FZY	2	HI-UPP
77094-211-410	BOLT-FLANGE;MSWR3 M5X10 FE,FZY	2	HI-LOW
77108-530-081	SCREW-TAP PH;2S-3X8 FE,FZY	2	MGTCO
77108-540-081	SCREW-TAP PH;+2S-4X8 FE FZY	1	B/HING
77128-240-085	SCREW-TAP TH;TAP TH 2-4X8 FE FN	2	C-CEIL
77128-240-085	SCREW-TAP TH;TAP TH 2-4X8 FE FN	2	B/HEAT
77128-540-101	SCREW-TAP TH;2S-4*10 FR FZY	3	C-AD-R
77154-202-910	WASHER-SCREW;2S-5X12	4	HVT
77154-202-910	WASHER-SCREW;2S-5X12	4	MGT
77154-203-8101	SCREW-A;2S-4X12(TOOTHED)	5	PN-OUT
77154-203-8101	SCREW-A;2S-4X12(TOOTHED)	1	B/WAVE
77154-203-8101	SCREW-A;2S-4X12(TOOTHED)	1	BASE-P
77154-203-8101	SCREW-A;2S-4X12(TOOTHED)	2	B/LATH
77154-203-8101	SCREW-A;2S-4X12(TOOTHED)	2	CN-BOX
77154-203-8101	SCREW-A;2S-4X12(TOOTHED)	1	SU/MGT
77154-203-8101	SCREW-A;2S-4X12(TOOTHED)	2	SW-THE
77154-203-8101	SCREW-A;2S-4X12(TOOTHED)	1	CV/AIR
77154-203-8101	SCREW-A;2S-4X12(TOOTHED)	3	BKT/U
77154-203-8101	SCREW-A;2S-4X12(TOOTHED)	2	LVT
77154-203-8101	SCREW-A;2S-4X12(TOOTHED)	4	A/CSIG
77154-203-8101	SCREW-A;2S-4X12(TOOTHED)	1	CB-CMP
77154-203-8101	SCREW-A;2S-4X12(TOOTHED)	1	B-A-GU
77154-203-8101	SCREW-A;2S-4X12(TOOTHED)	2	CV-BAK
77224-209-610	NUT-FLANGE;MSWR10 M4	1	SENSOR
77128-540-081	SCREW-TAP TH;2-SLOT 4X8 FE.FZY	3	CV/MOT.
77128-540-081	SCREW-TAP TH;2-SLOT 4X8 FE.FZY	1	C/CORD
A0103-0010	SCREW-ASSY TAPTITE;PH TC M4X8 SWRCH18A ZPC2 GLD WT	2	M/DRIV
A0103-0010	SCREW-ASSY TAPTITE;PH TC M4X8 SWRCH18A ZPC2 GLD WT	2	CV-TCO
77168-530-081	SCREW-TAP PH;PLAIN 2S-3X8 FE.FZY	5	PCB

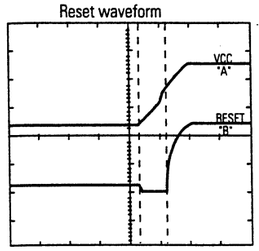
P.C.B Circuit Diagram

TEST CONDITION	INPUT VOLTAGE	TEST POINT					L.V.T SPEC
		a (AC V)	b (DC V)	c (DC V)	d (DC V)	e (AC mA)	
NO LOAD	AC 207V	18.05 V	20.98 V	14.05 V	4.98 V	210	INPUT 230V 50HZ OUTPUT 16V 0.8A
	AC 230V	18.06 V	20.98 V	14.06 V	4.98 V	230	
	AC 253V	18.06 V	20.98 V	14.06 V	4.98 V	253	
LOAD	AC 207V	17.06 V	16.35 V	13.80 V	4.98 V	643	
	AC 230V	17.09 V	16.37 V	13.80 V	4.98 V	650	
	AC 253V	17.11 V	16.82 V	13.88 V	4.98 V	653	

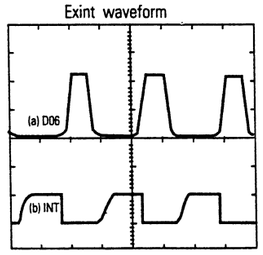
X-TAL waveform



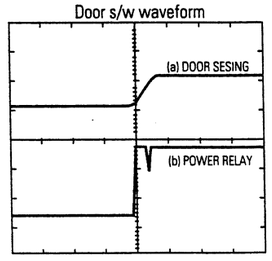
Reset waveform

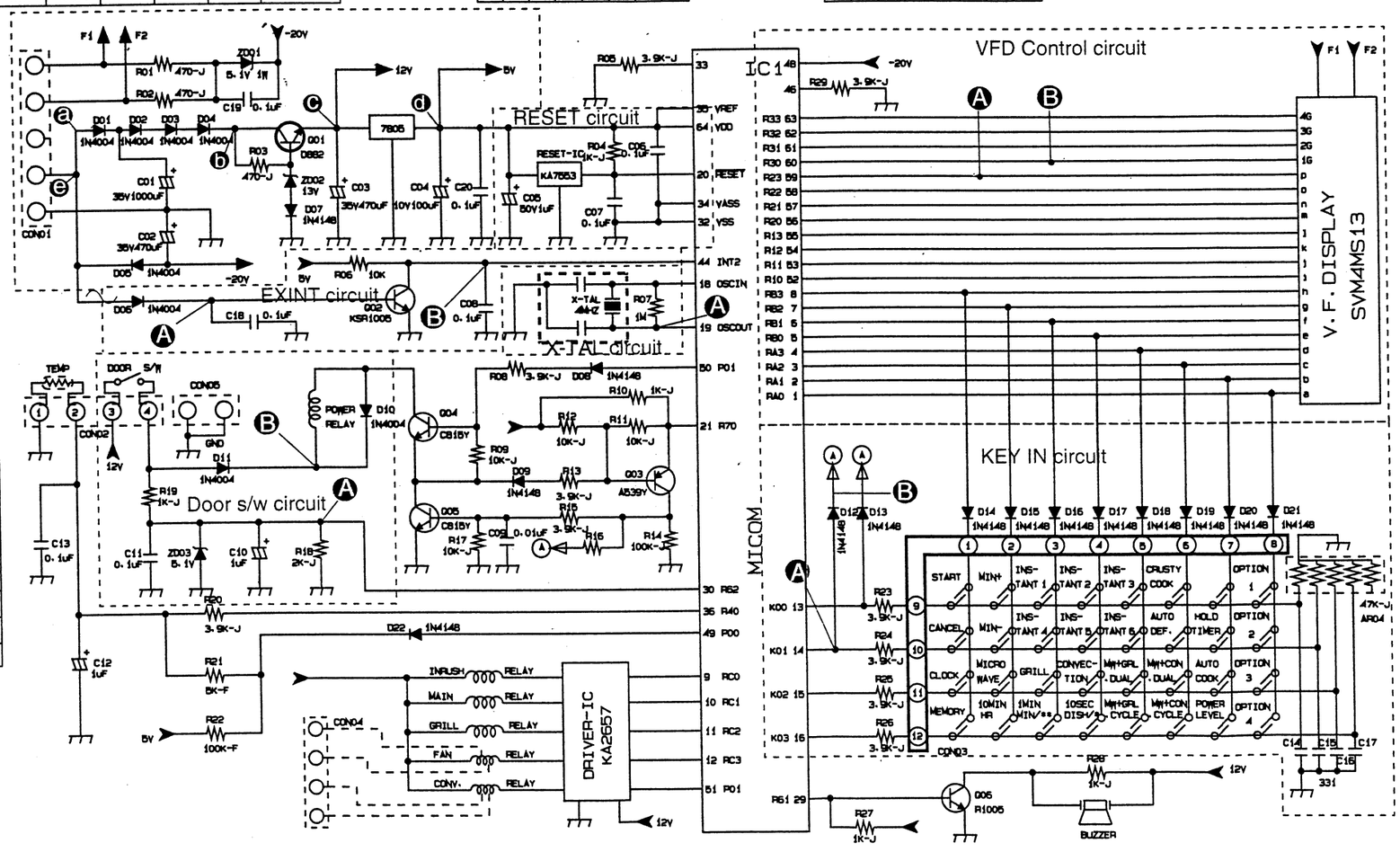


Exint waveform

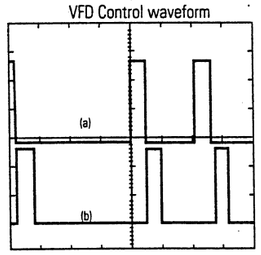


Door s/w waveform

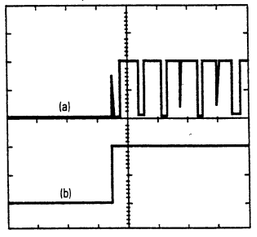




VFD Control waveform



Key IN waveform



Parts List - P.C.B Parts

Parts No.	Description/Specification	Q'ty	Remark
73323-0047-001	HOLDER-DIGITRON;NYLON #66 10G BLK	1	
71018-277-202	R-CARBON;RD1/4TP 2K-J	1	R18
71607-402-293	C-ELEC;CE0.4W35V1000UF(TAPG)	1	C01
72137-101-064	TR-PNP; KSA 539Y (TAPG)	1	Q03
72137-301-010	TR-NPN;KSC 815-Y(TAPG)	1	Q04
72137-301-010	TR-NPN;KSC 815-Y(TAPG)	1	Q05
72147-301-431	TR-POWER;KSD882Y(TAPG)	1	Q01
72163-200-010	DIODE ZENOR;1W 5.1V	1	ZD01
72163-200-010	DIODE ZENOR;1W 5.1V	1	ZD03
74723-200-010	RELAY;KM11-M12 NIL 250V 5A	1	CONV.
74723-200-010	RELAY;KM11-M12 NIL 250V 5A	1	FAN
77199-0188-00	MICOM;TMP47C862AN-P581LZ RE-1300 DIP	1	IC01 ⚠
A1000-0014	R-CARBON;RD 1/4 T 105-J	1	R07
A1000-0151	R-CARBON;RD 1/4 T 102-J	1	R04
A1000-0151	R-CARBON;RD 1/4 T 102-J	1	R10
A1000-0151	R-CARBON;RD 1/4 T 102-J	1	R19
A1000-0151	R-CARBON;RD 1/4 T 102-J	1	R27
A1000-0151	R-CARBON;RD 1/4 T 102-J	1	R28
A1000-0153	R-CARBON;RD 1/4 T 104-J	1	R14
A1000-0172	R-CARBON;RD 1/4 T 392-J	1	R05
A1000-0172	R-CARBON;RD 1/4 T 392-J	1	R08
A1000-0172	R-CARBON;RD 1/4 T 392-J	1	R13
A1000-0172	R-CARBON;RD 1/4 T 392-J	1	R15
A1000-0172	R-CARBON;RD 1/4 T 392-J	1	R20
A1000-0172	R-CARBON;RD 1/4 T 392-J	1	R23
A1000-0172	R-CARBON;RD 1/4 T 392-J	1	R24
A1000-0172	R-CARBON;RD 1/4 T 392-J	1	R25
A1000-0172	R-CARBON;RD 1/4 T 392-J	1	R26
A1000-0172	R-CARBON;RD 1/4 T 392-J	1	R29
A1000-0173	R-CARBON;RD 1/4 T 471-J	1	R01
A1000-0173	R-CARBON;RD 1/4 T 471-J	1	R02
A1000-0173	R-CARBON;RD 1/4 T 471-J	1	R03
A1004-0333	R-METAL FILM;RM 1/4 T 104-F	1	R21
A1006-0246	R-CARBON;RD 1/4 T 103-J	1	R06
A1006-0246	R-CARBON;RD 1/4 T 103-J	1	R09
A1006-0246	R-CARBON;RD 1/4 T 103-J	1	R11
A1006-0246	R-CARBON;RD 1/4 T 103-J	1	R12
A1006-0246	R-CARBON;RD 1/4 T 103-J	1	R16
A1006-0246	R-CARBON;RD 1/4 T 103-J	1	R17
A1006-0611	R-METAL FILM;RM 1/4 T 502-F	1	R21
A1018-0067	R-NETWORK;RN 1/8 X 6P 473-J T MHR5A473J	1	AR01
A1100-0340	C-CERAMIC;CK OA Y5V 50V T 104-Z UP050F104ZBB	1	C06
A1100-0340	C-CERAMIC;CK OA Y5V 50V T 104-Z UP050F104ZBB	1	C07
A1100-0340	C-CERAMIC;CK OA Y5V 50V T 104-Z UP050F104ZBB	1	C08
A1100-0340	C-CERAMIC;CK OA Y5V 50V T 104-Z UP050F104ZBB	1	C11
A1100-0340	C-CERAMIC;CK OA Y5V 50V T 104-Z UP050F104ZBB	1	C13
A1100-0340	C-CERAMIC;CK OA Y5V 50V T 104-Z UP050F104ZBB	1	C18
A1100-0340	C-CERAMIC;CK OA Y5V 50V T 104-Z UP050F104ZBB	1	C19
A1100-0340	C-CERAMIC;CK OA Y5V 50V T 104-Z UP050F104ZBB	1	C20
A1100-0603	C-CERAMIC;CK 45 X7R 50V T 332-K	1	C14
A1100-0603	C-CERAMIC;CK 45 X7R 50V T 332-K	1	C15
A1100-0603	C-CERAMIC;CK 45 X7R 50V T 332-K	1	C16
A1100-0603	C-CERAMIC;CK 45 X7R 50V T 332-K	1	C17
A1100-0803	C-CERAMIC;CG OA Y5V 25V T 103-Z TP050F103ZB	1	C09
A1104-0015	C-ELEC;CE 04 C 10V T 101-M LN W SRA 6.3X7X2.5	1	C04
A1104-0029	C-ELEC;CE 04 C 50V T 010-M 1SA1HFB105MAN10005/GL 1	1	C05
A1104-0029	C-ELEC;CE 04 C 50V T 010-M 1SA1HFB105MAN10005/GL 1	1	C10

Parts List - P.C.B Parts

Parts No.	Description/Specification	Q'ty	Remark
A1104-0029	C-ELEC;CE 04 C 50V T 010-M 1SA1HFB105MAN10005/GL 1	1	C12
A1104-0108	C-ELEC;CE 04 C 35V T 471-M 1SG1VFB477MAN 470MF	1	C02
A1104-0108	C-ELEC;CE 04 C 35V T 471-M 1SG1VFB477MAN 470MF	1	C03
A4008-0754	IC;KA7533 DIP	1	RESET
A4060-0008	TR-W/RESISTOR;KSR1005 300MW 100MA 50V EBN/4.7KR1	1	Q02
A4060-0008	TR-W/RESISTOR;KSR1005 300MW 100MA 50V EBN/4.7KR1	1	Q06
A4100-0003	DIODE-SW;1N4148 1.2V 4.0NS T	1	D07
A4100-0003	DIODE-SW;1N4148 1.2V 4.0NS T	1	D08
A4100-0003	DIODE-SW;1N4148 1.2V 4.0NS T	1	D09
A4100-0003	DIODE-SW;1N4148 1.2V 4.0NS T	1	D12
A4100-0003	DIODE-SW;1N4148 1.2V 4.0NS T	1	D13
A4100-0003	DIODE-SW;1N4148 1.2V 4.0NS T	1	D15
A4100-0003	DIODE-SW;1N4148 1.2V 4.0NS T	1	D16
A4100-0003	DIODE-SW;1N4148 1.2V 4.0NS T	1	D17
A4100-0003	DIODE-SW;1N4148 1.2V 4.0NS T	1	D18
A4100-0003	DIODE-SW;1N4148 1.2V 4.0NS T	1	D19
A4100-0003	DIODE-SW;1N4148 1.2V 4.0NS T	1	D20
A4100-0003	DIODE-SW;1N4148 1.2V 4.0NS T	1	D21
A4100-0003	DIODE-SW;1N4148 1.2V 4.0NS T	1	D22
A4104-0109	DIODE-RECT;1N4004 400V 1A T	1	D01
A4104-0109	DIODE-RECT;1N4004 400V 1A T	1	D02
A4104-0109	DIODE-RECT;1N4004 400V 1A T	1	D03
A4104-0109	DIODE-RECT;1N4004 400V 1A T	1	D04
A4104-0109	DIODE-RECT;1N4004 400V 1A T	1	D05
A4104-0109	DIODE-RECT;1N4004 400V 1A T	1	D06
A4104-0109	DIODE-RECT;1N4004 400V 1A T	1	D10
A4104-0109	DIODE-RECT;1N4004 400V 1A T	1	D11
A4106-0083	DIODE-ZENER;UZP-13B 12.4/14.1V 20MA T	1	ZD02
A6010-0163	CONNECTOR-WAFER;B5B-XH-A WHT	1	CON01
A6010-0199	CONNECTOR-WAFER;B4B-XH-A WHT	1	CON02
A6040-0011	WIRE-SO COPPER;PI0.6 SN T 52MM	23	J01~J23
B1283-0013	RESONATOR-CERAMIC;4.0MHZ FCR4.0MCTB 3/CN D	1	X-TAL ⚠
A1305-0012	BUZZER;CBE2220BA STICK	1	BUZZER
A3068-0086	RELAY;CS-1PD-1 DC12V16A	1	POWER
A3068-0086	RELAY;CS-1PD-1 DC12V16A	1	MAIN
A3068-0086	RELAY;CS-1PD-1 DC12V16A	1	INRUSH
A3068-0086	RELAY;CS-1PD-1 DC12V16A	1	GRILL
A4008-1092	IC-VOLT REGU;KA7805A TO-220AB 1A 0/125C	1	V-REG
A4008-1222	IC-DRIVE;KID65003AP DIP 16P STICK TR-ARRY	1	IC02 ⚠
A4153-0063	V.F.DISPLAY;SVM-4MS13S MWO RE-1280	1	
A6010-0189	CONNECTOR-WAFER;B2B-XH-A WHT	1	CON05
A6010-0470	CONNECTOR-WAFER;YW396-07AV WHT	1	CON04
A6010-0608	CONNECTOR-WAFER;FCZ254-12SL BLK	1	CON03